Armed Forces College of Medicine

AFCM

Stomach

By Professor Dr. Shahira Youssef

INTENDED LEARNING OBJECTIVES (ILO)

By the end of this lecture the student will be able to:

1. Describe sites and parts of stomach
2. Describe site and surface anatomy of cardiac and pyloric ends
3. Describe the curvatures and related peritoneal coverings
4. Describe the relations , blood, nerve, & lymphatic drainage of stomach
5. List boundaries of lesser sac & epiploic foramen & its applied anatomy

A common complain in your practice ????????

Stomach

A. Position
B. Parts
C. Surfaces
D. Borders
E. Blood supply
F. Lesser sac boundaries
G. Opening to lesser sac

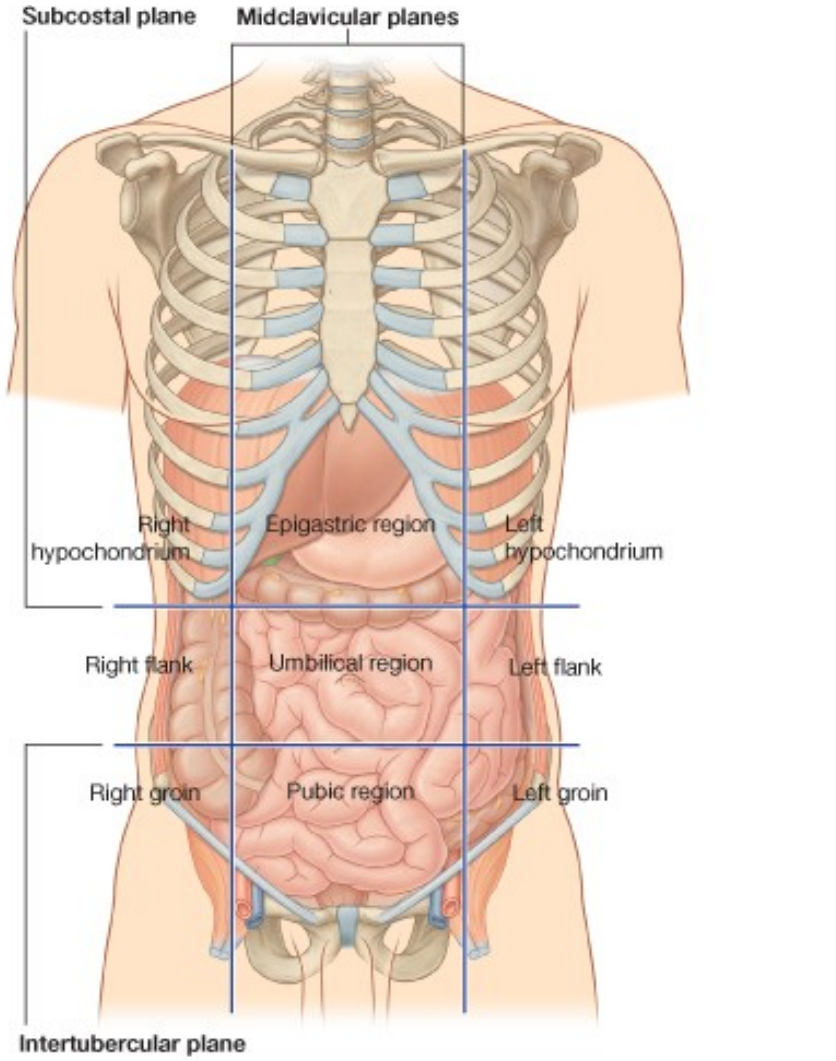
Stomach

- It lies in left **hypochondrium ,umbilical and epigastrium region.** it is the most dilated part of gut

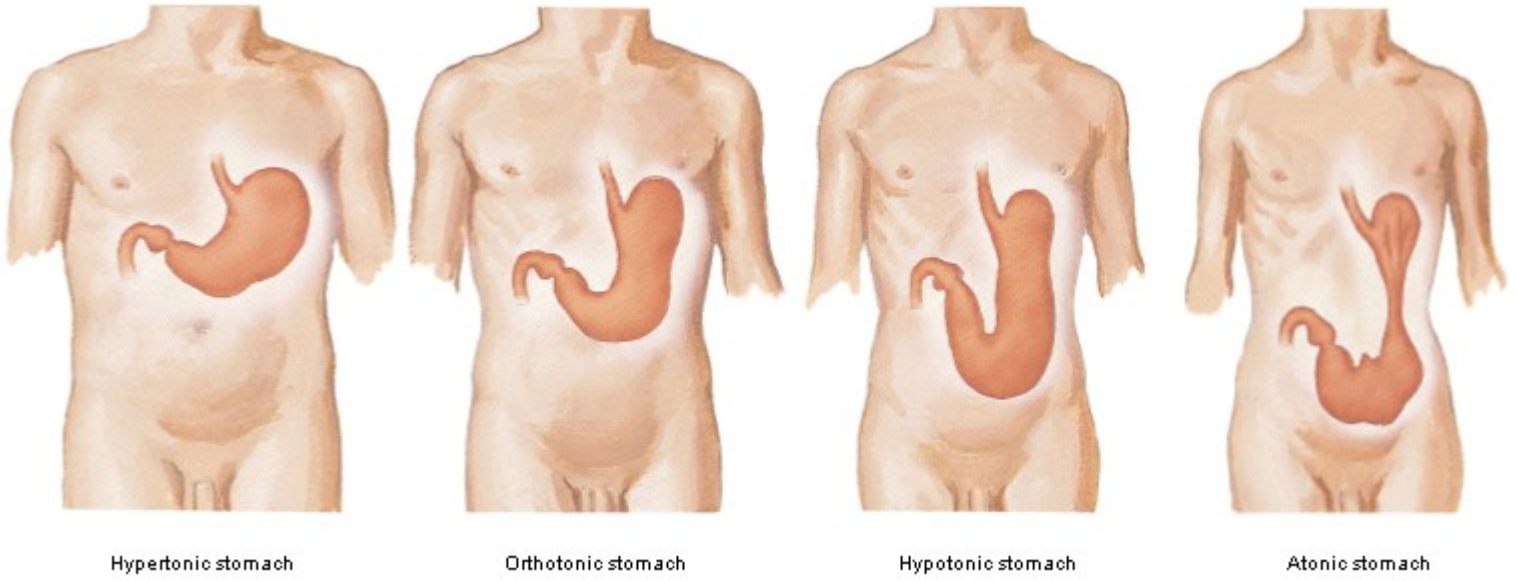
Shapes

- **J shaped**: common type ,stomach is vertical
- **Steer horn**: in obese people stomach is transverse
- **Intermediate type**

Stomach



Shapes of stomach



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Ends and orifices of stomach

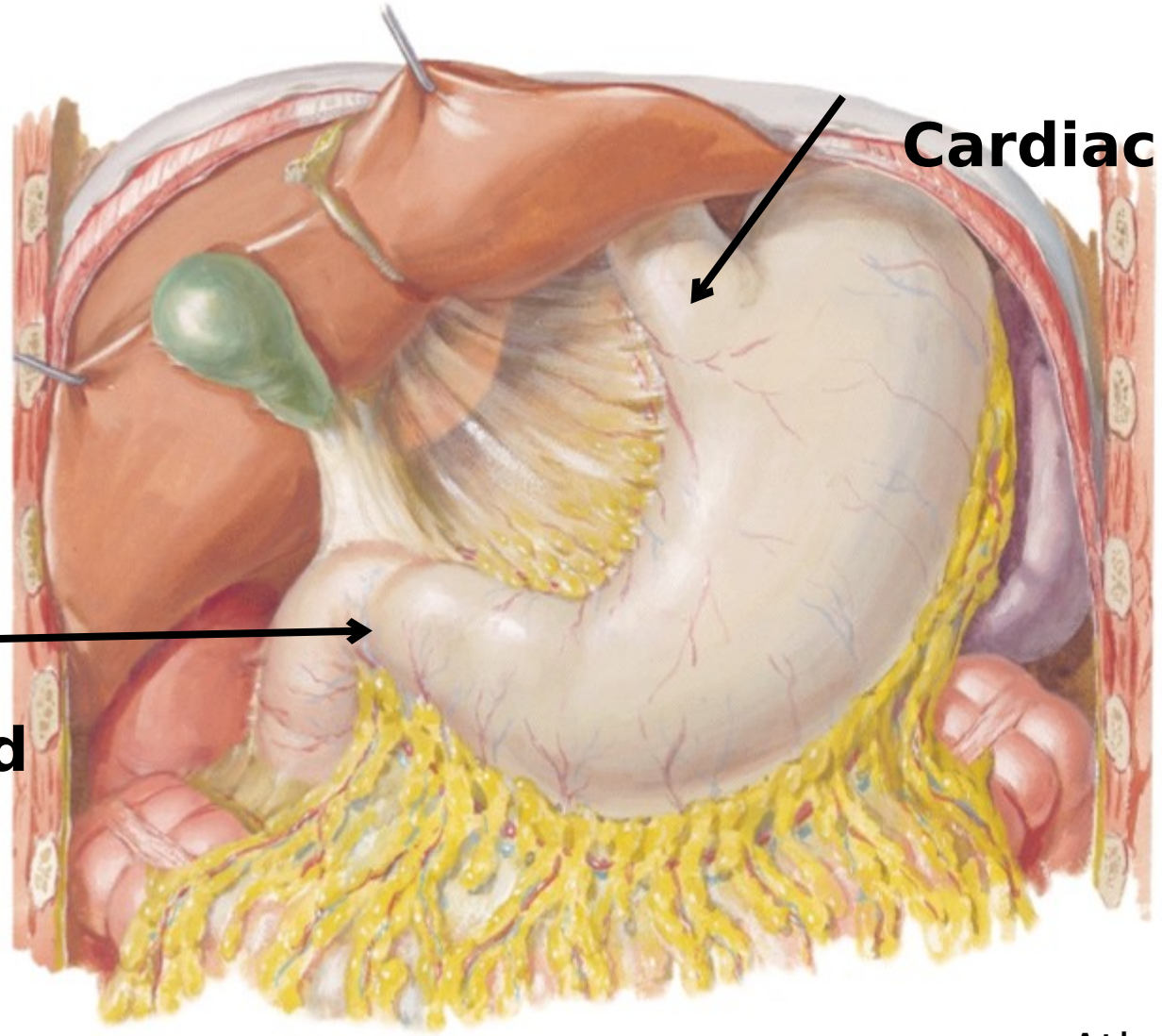
Cardiac end:

- Behind 7 left costal cartilage one inch from its junction with sternum at level of T 11
- Related to left lobe of liver
- It is fixed & has no true anatomical sphincter (only physiological)

Pyloric end:

- ½ an inch to right of median plane at lumbar 1
- Related to quadrate lobe of liver
- it is mobile &has true anatomical sphincter & identified by prepyloric vein of Mayo

Orifices of stomach



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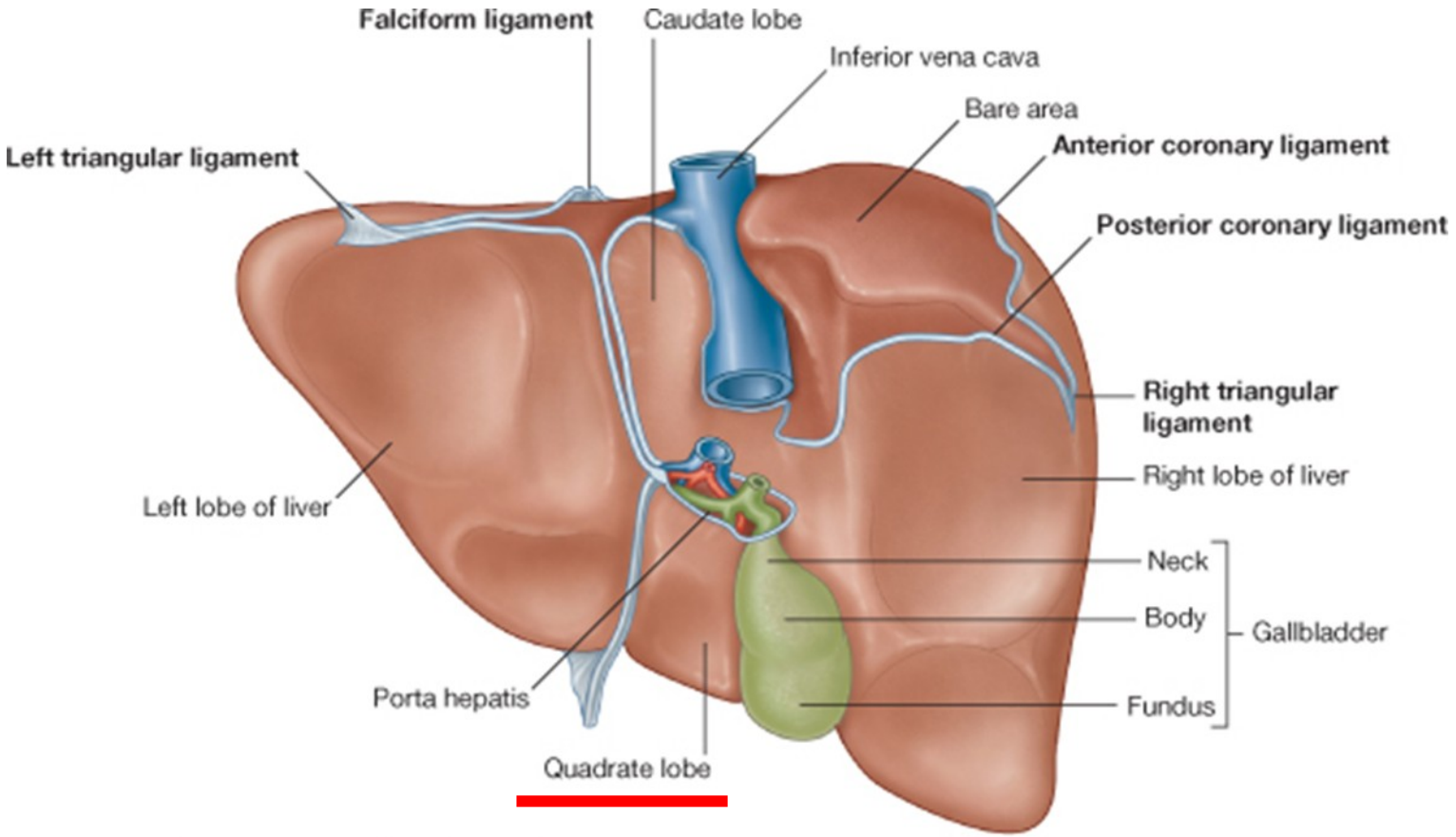
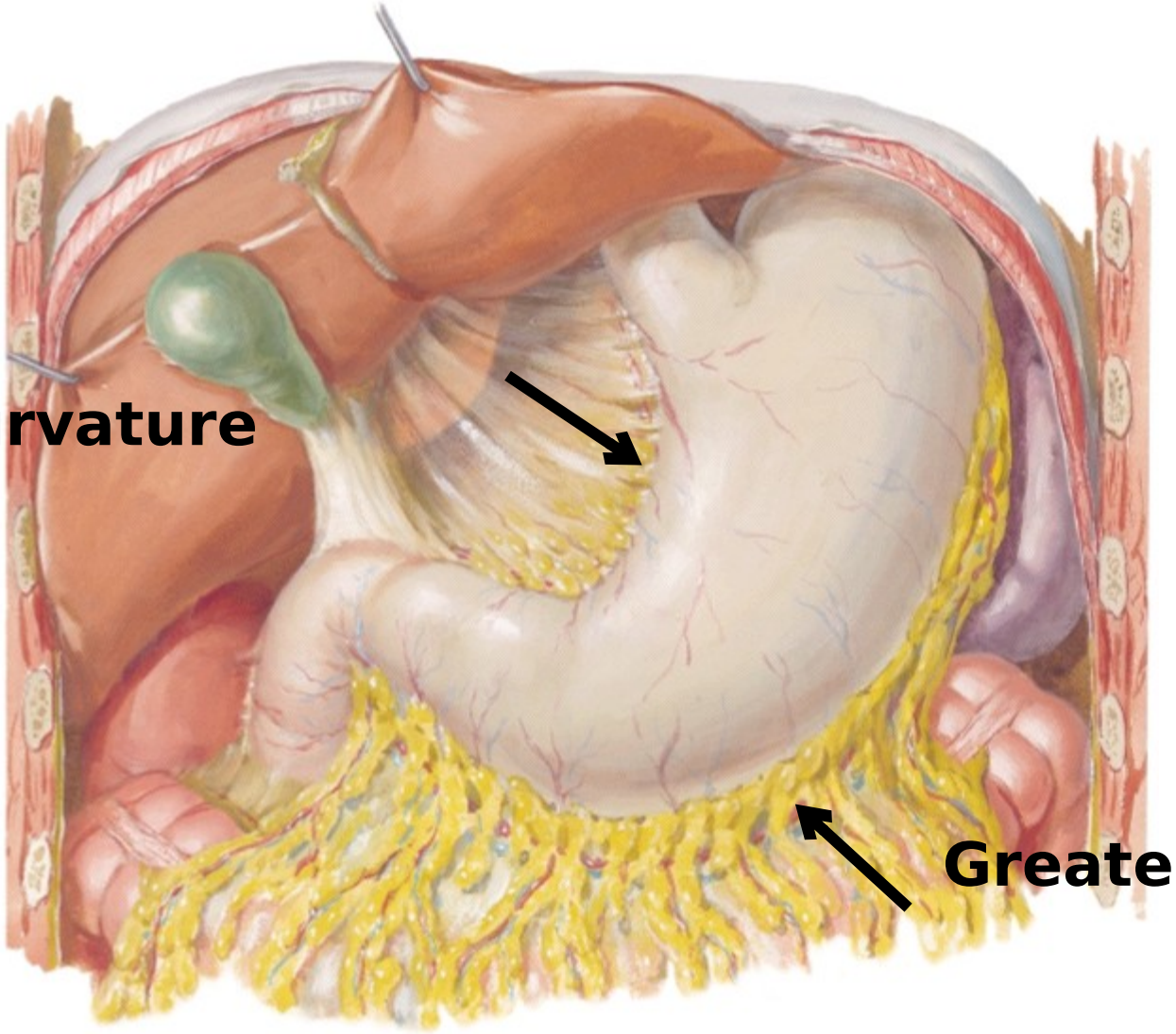
Relations of stomach



Curvatures of stomach



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Curvatures

- **Lesser Curvature:**

concave ,short, right border & gives attachment to lesser omentum

- **Greater Curvature:**

convex ,larger, left border & gives attachment to greater omentum, gastrosplenic & gastrophernic ligaments

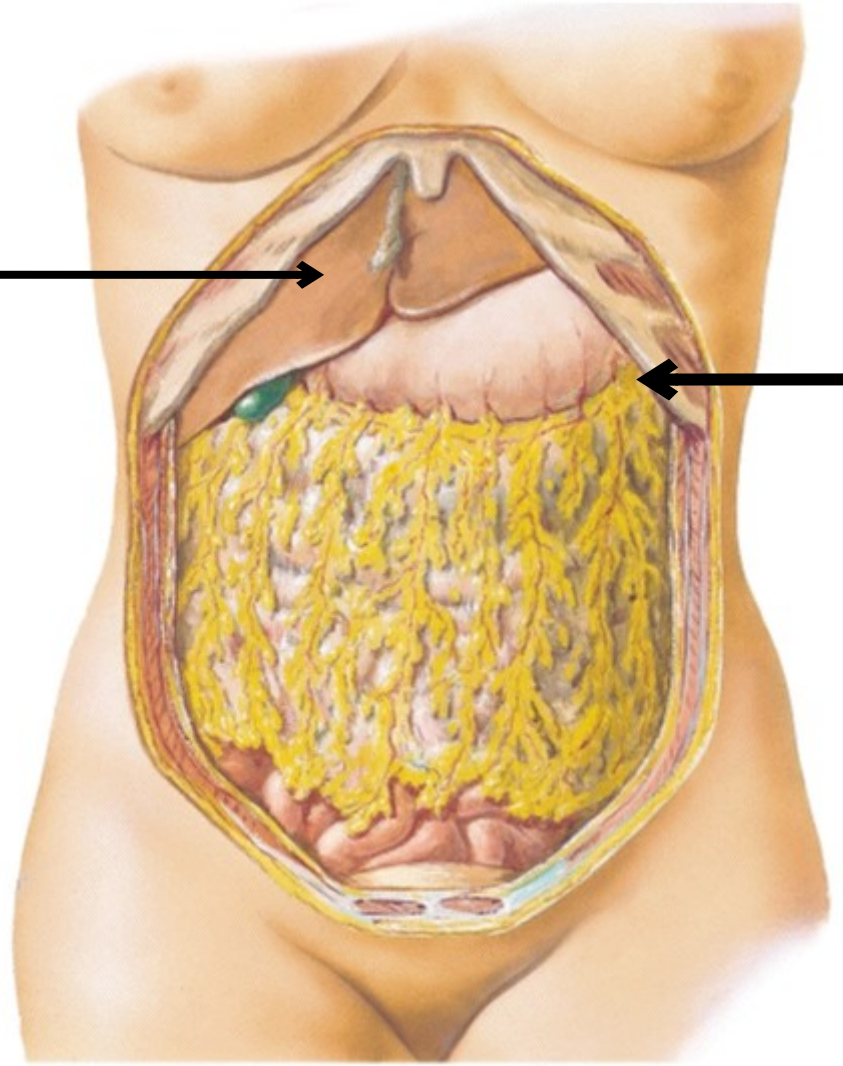
Relations of anterior surface of stomach

Anterior surface :

Completely covered by peritoneum

- **Left part** : diaphragm & left costal margin
- **Right part**: liver
- **Intermediate part** : anterior abdominal wall

Relations of anterior surface of stomach



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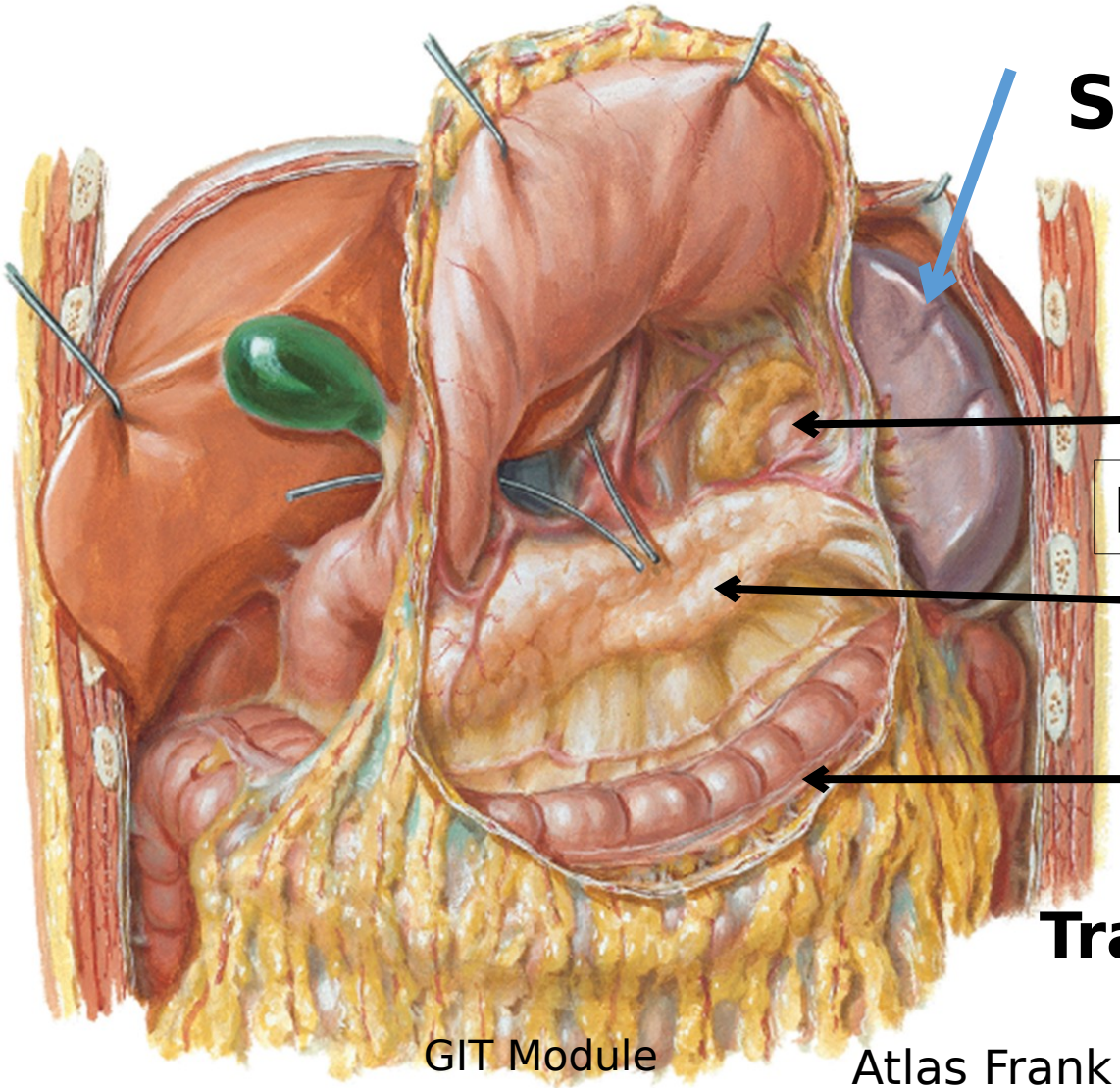
Posterior surface of stomach

It is completely covered by peritoneum except small bare area close to cardiac orifice it is related to (stomach Bed)

- Left crus of diaphragm
- Left kidney & left supra renal
- Anterior surface of Pancreas& splenic artery
- Transverse colon & transverse meso –colon
- Spleen

All the above structures are separated from stomach by lesser sac except spleen separated by cavity of greater sac

Stomach bed



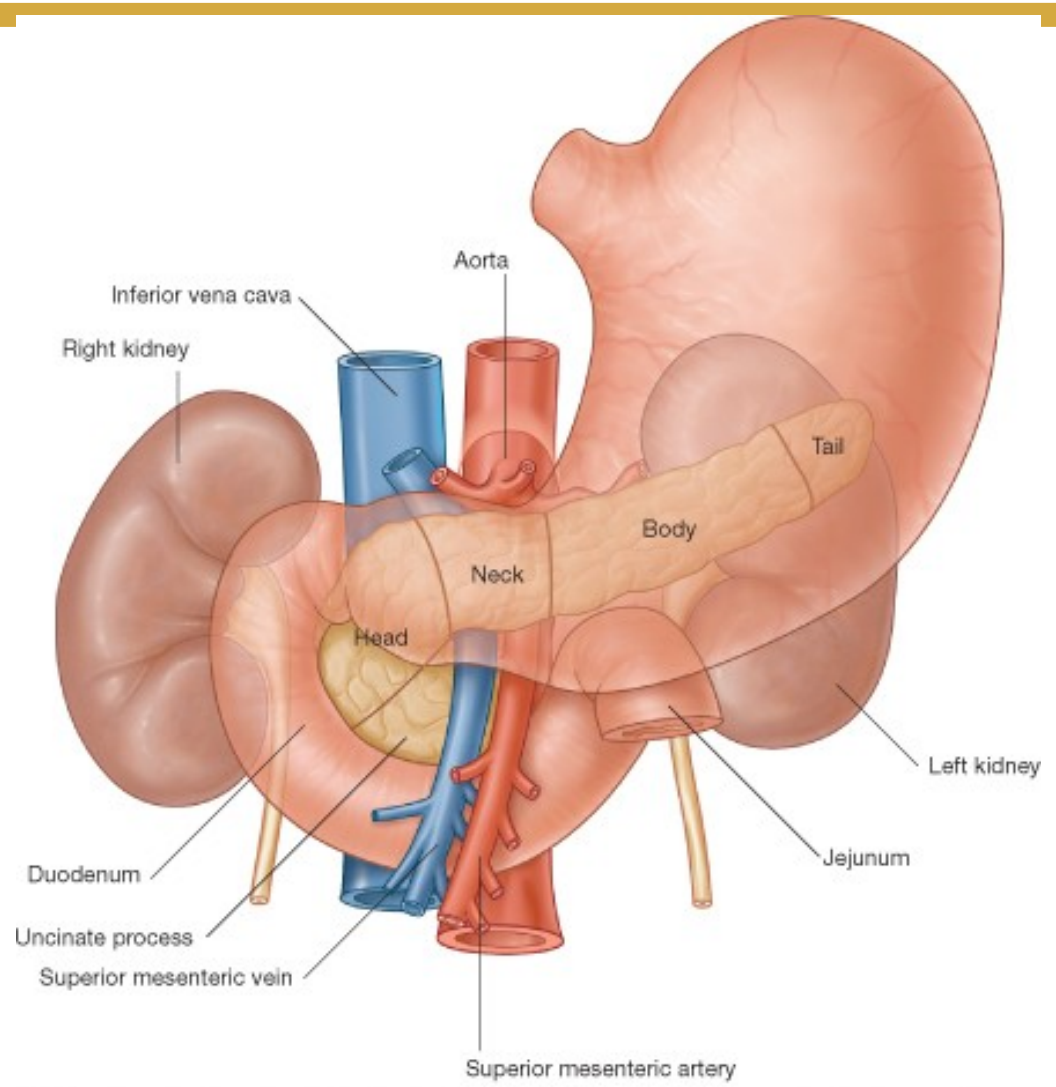
Spleen

Left kidney & supraren

Pancreas & splenic A

Transverse colon & meso

Stomach bed



Stomach bed

cer in posterior wall can cause bleeding due to erosion of which of the following arteries ?

t gastric
gastric
rt gastric
enic artery

Parts of stomach

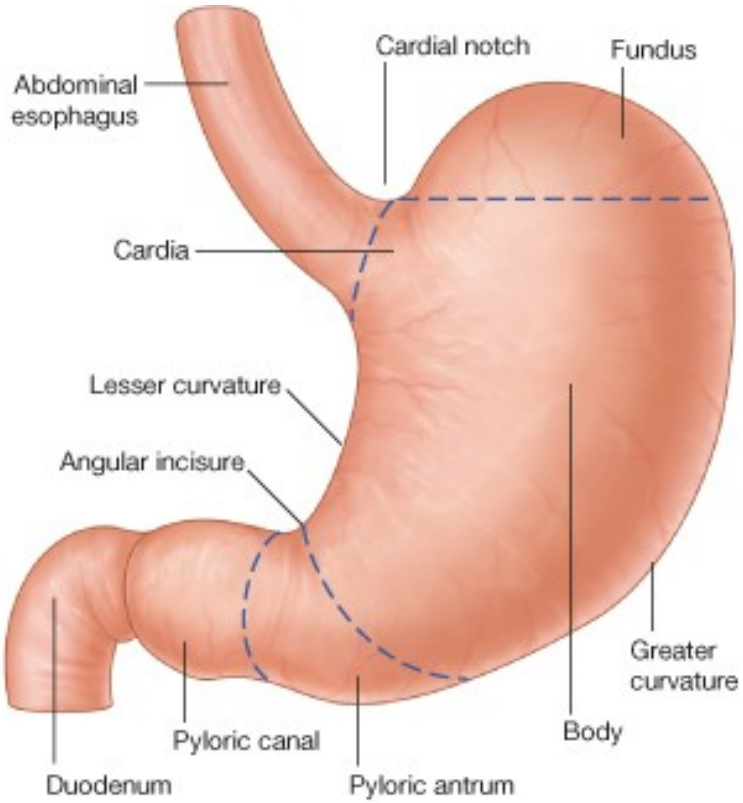
Cardiac portion

1-<u>Fundus</u>: part above cardiac orifice full of gases

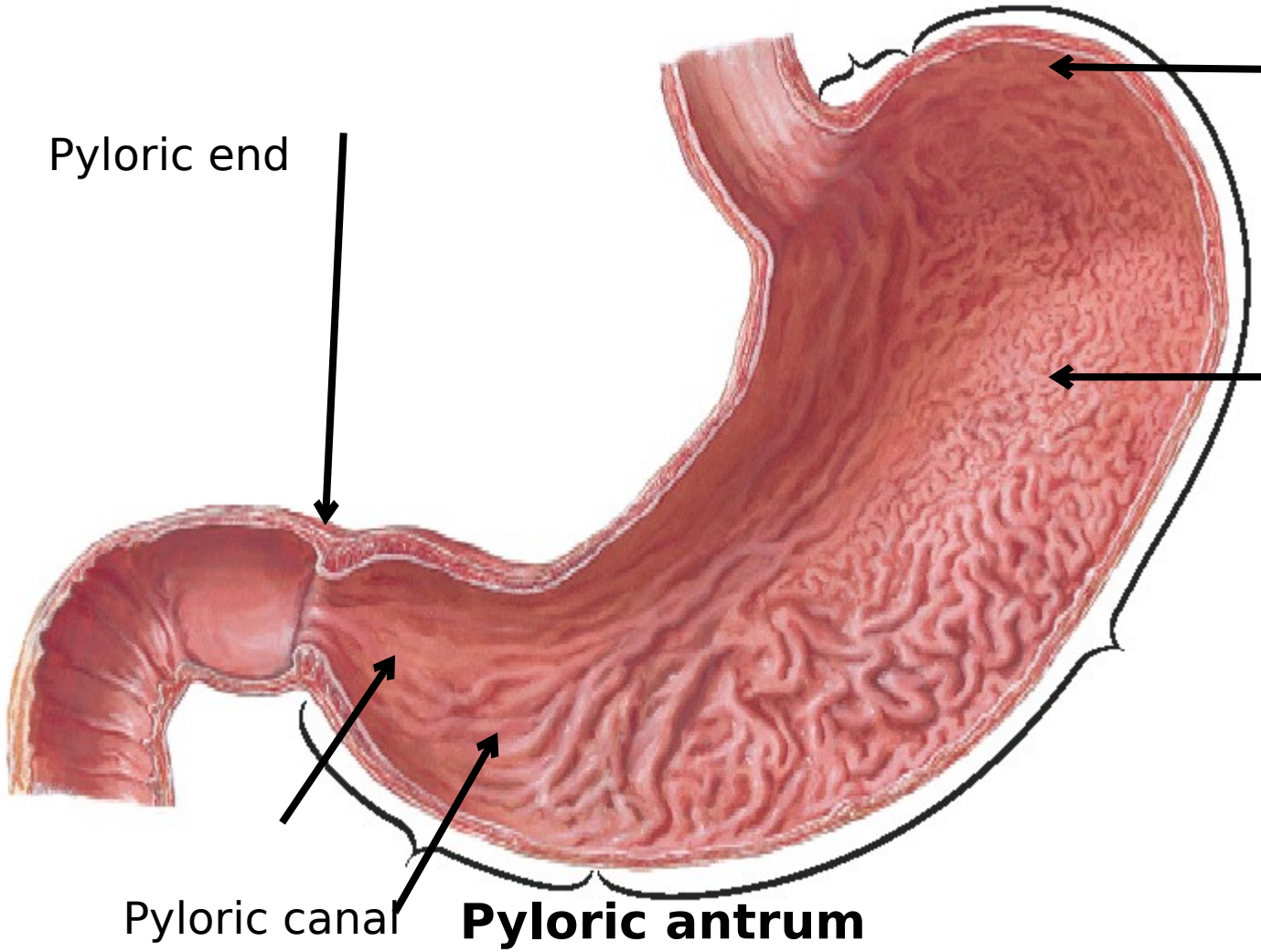
2-<u>Body</u>: dilated part below fundus

Pyloric portion

1. **Pyloric antrum**
2. **Pyloric canal(one inch)**
3. **Pyloric orifice**



Parts of stomach



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Blood supply

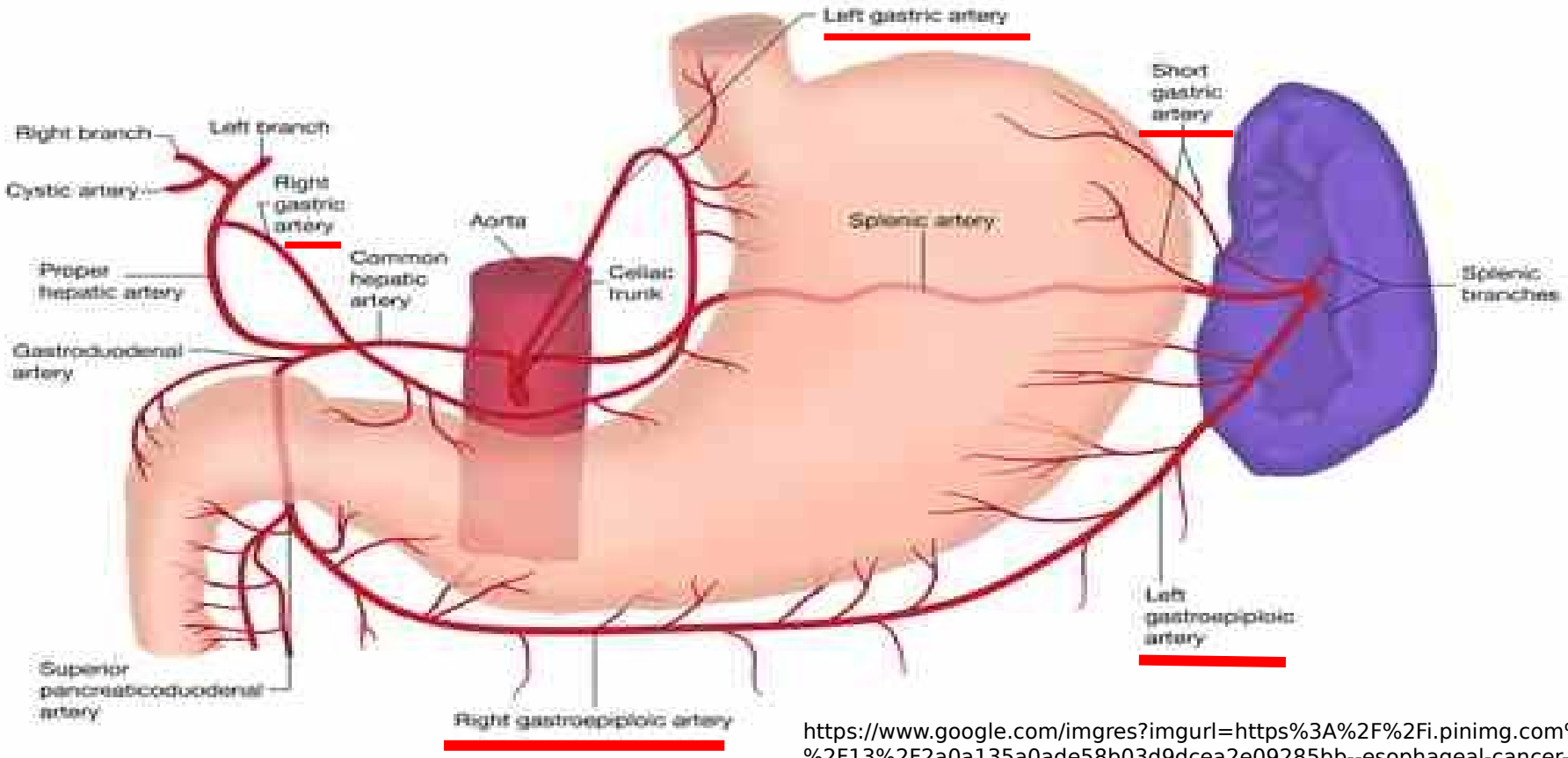
1. Right gastric
2. Left gastric
3. Right gastric epiploic
4. Left gastric epiploic
5. Short gastric

Along lesser curvature

Along greater curvature

Fundus

Blood supply



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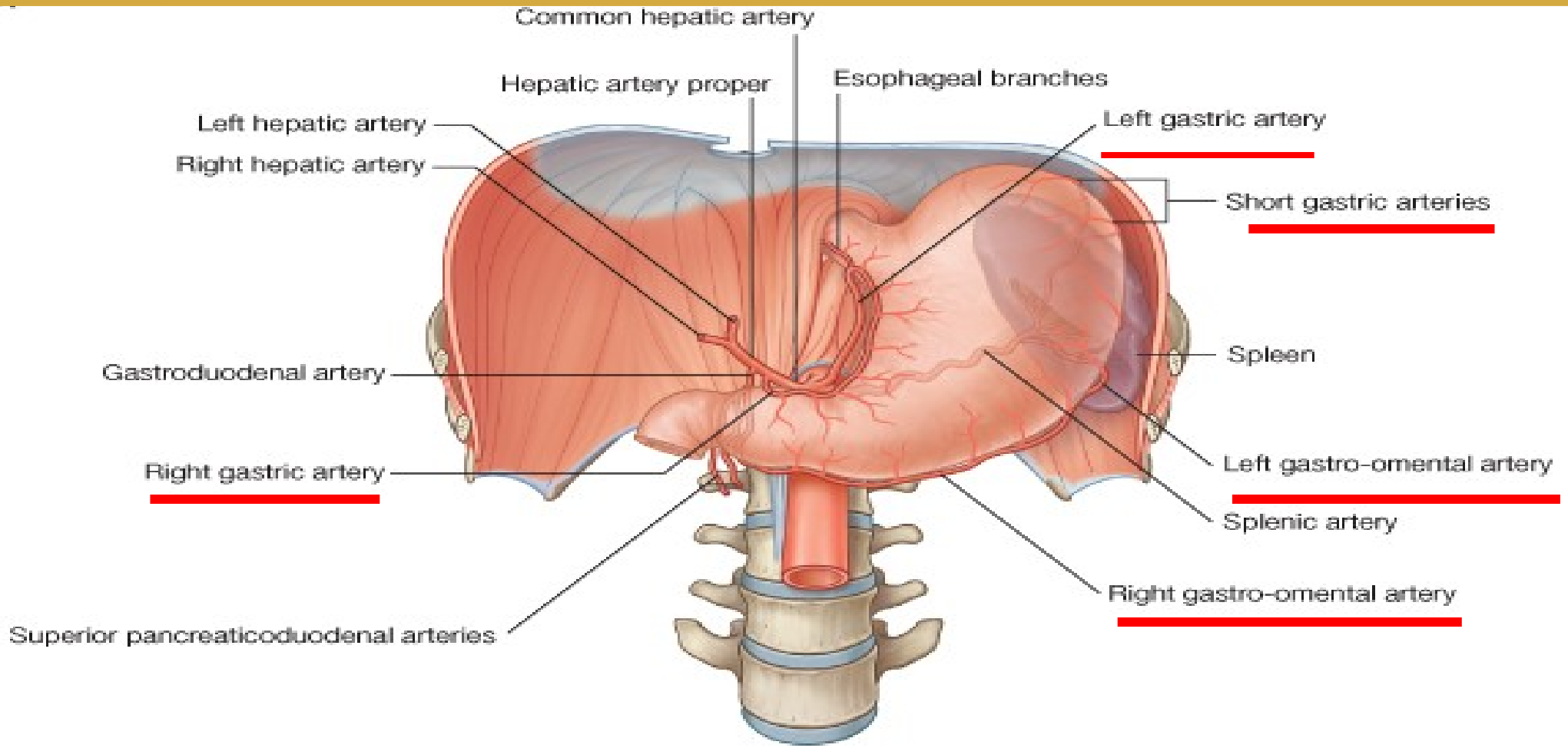
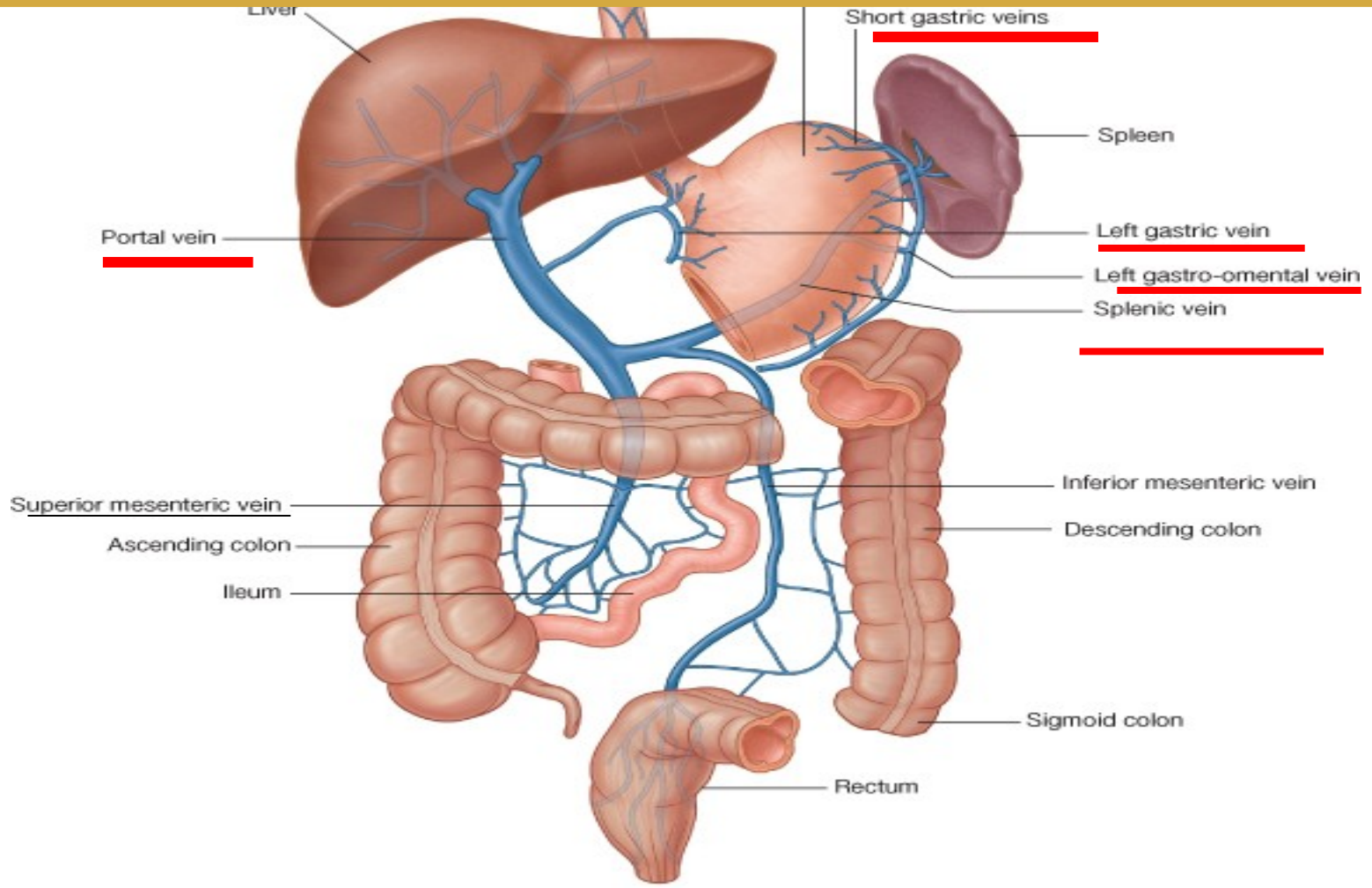
Blood supply



Venous drainage of stomach

1. Right and left gastric drains in **portal vein**
2. Short gastric and left gastric epiploic end in **splenic vein**
3. Right gastric epiploic end in **portal vein or superior mesenteric vein**

Venous drainage



Questions

Left gastric epiploic is a branch of which of the following ?

A- hepatic
B- splenic
C- left gastic
D- aorta
E- common hepatic

Peritoneal coverings

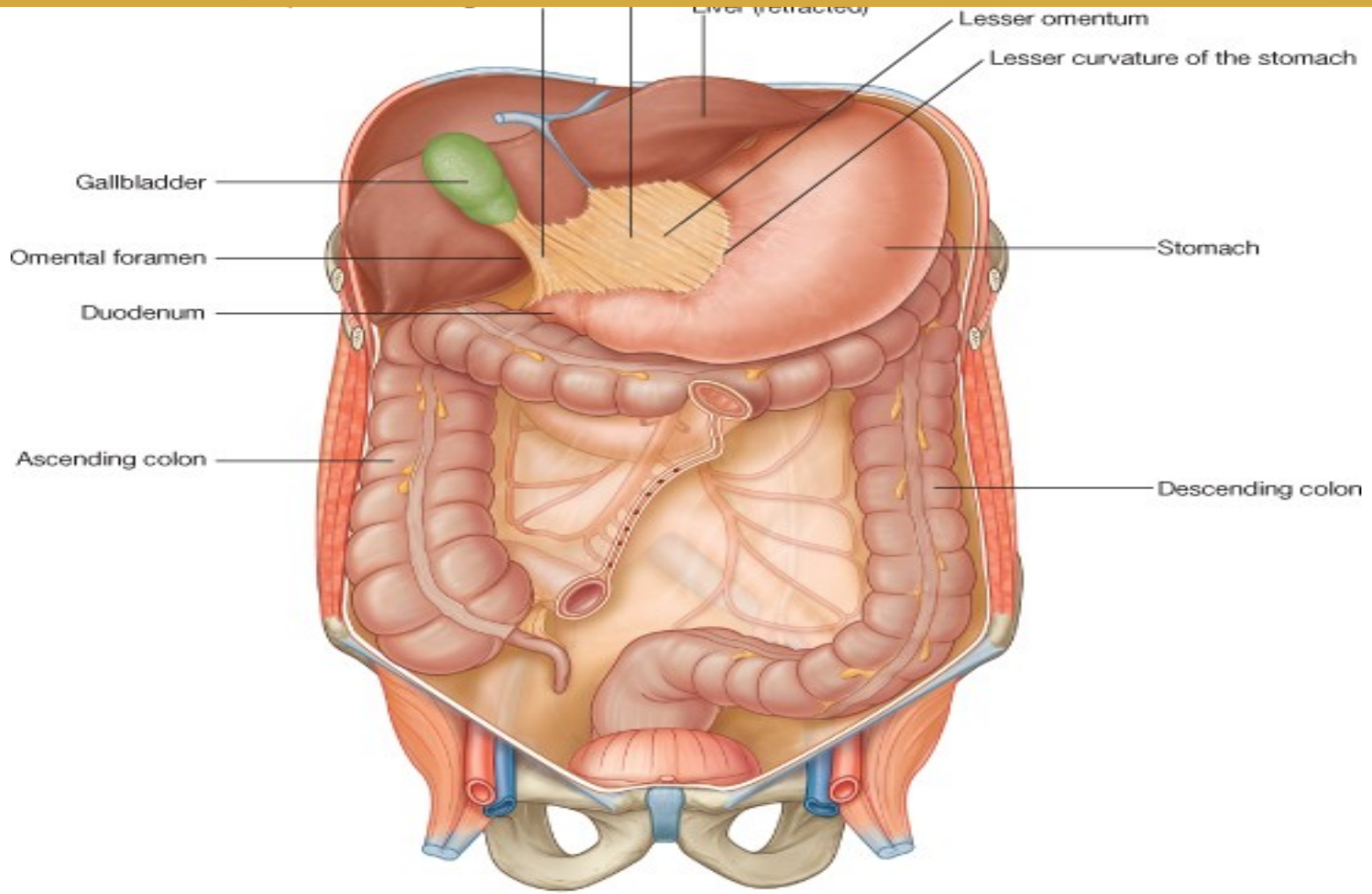
Lesser Omentum:

- Attached above to porta hepatis fissure for ligamentum venosum
- Below to lesser curvature& first inch of duodenum.
- At right margin 2 layers of lesser omentum are continuous and form free margin
- Contains : right and left gastric arteries, extra peritoneal fatty tissue, lymphatics & autonomic nerves

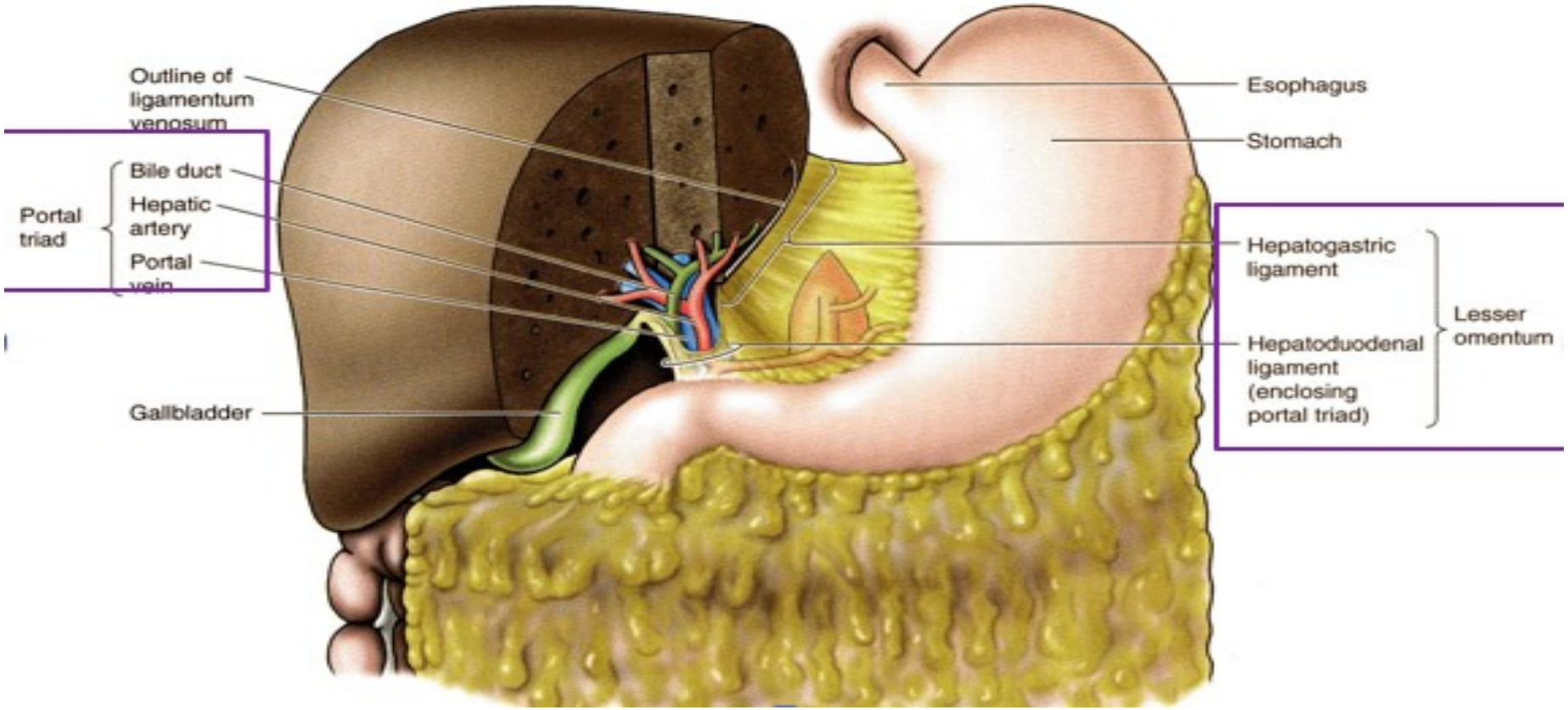
In free margin

Portal vein(posterior) , bile duct (

Lesser omentum



Greater omentum



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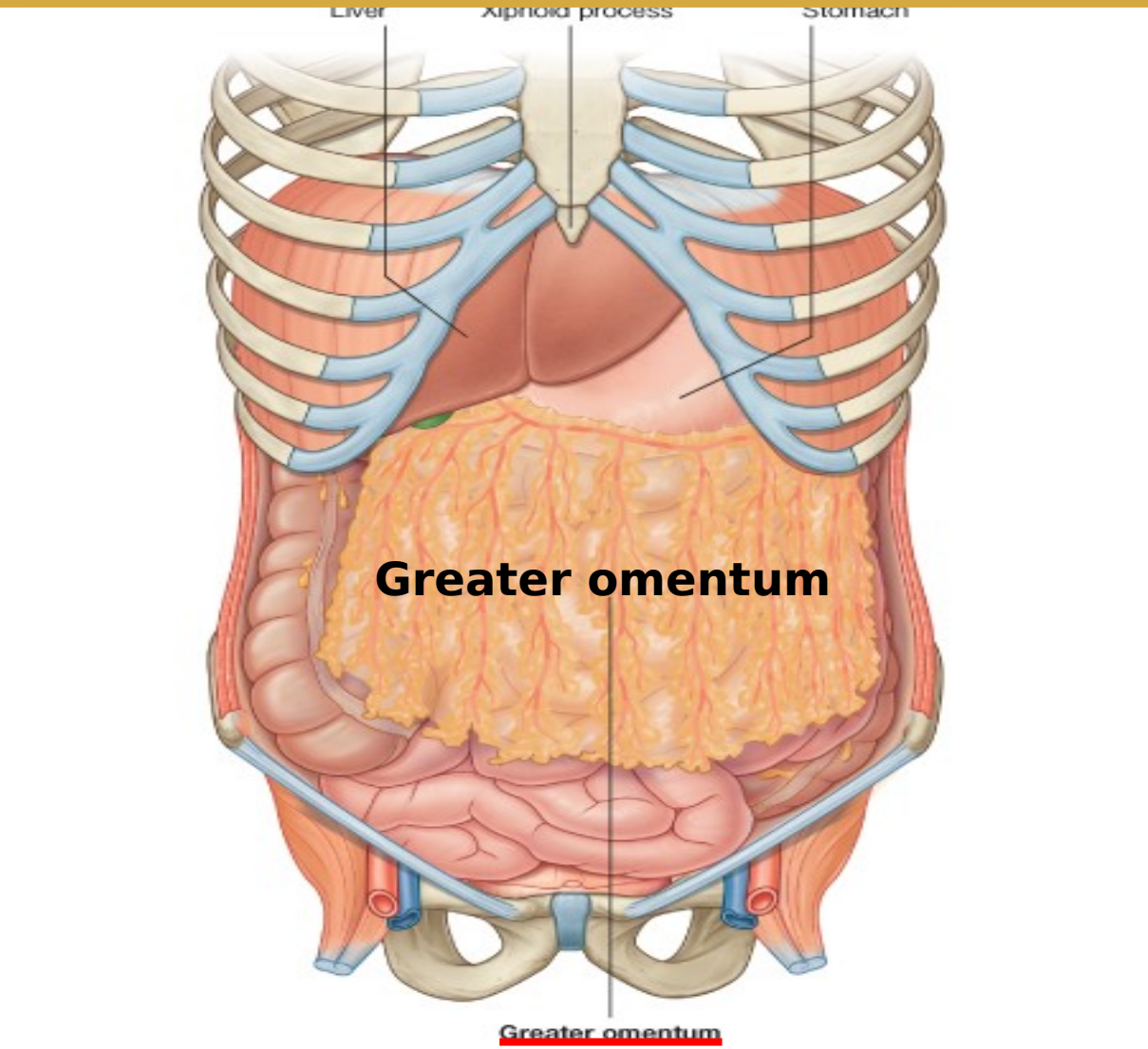
Greater omentum

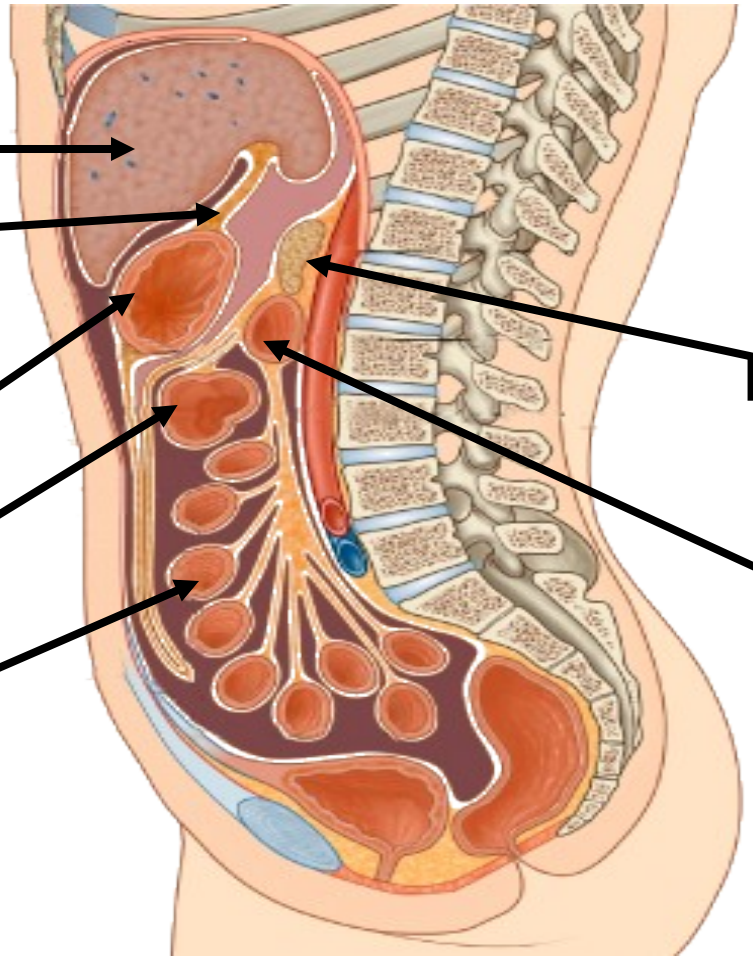
- It has 4 layers
- Anterior 2 layers are attached to greater curvature of stomach and first inch of duodenum descend to cover loops of intestine
- They turn upwards as posterior 2 layers to reach anterior border of pancreas

Contents : right and left gastric epiploic arteries extraperitoneal fatty tissue, lymphatics & autonomic nerve fibers

Greater Omentum



Ligaments of stomach



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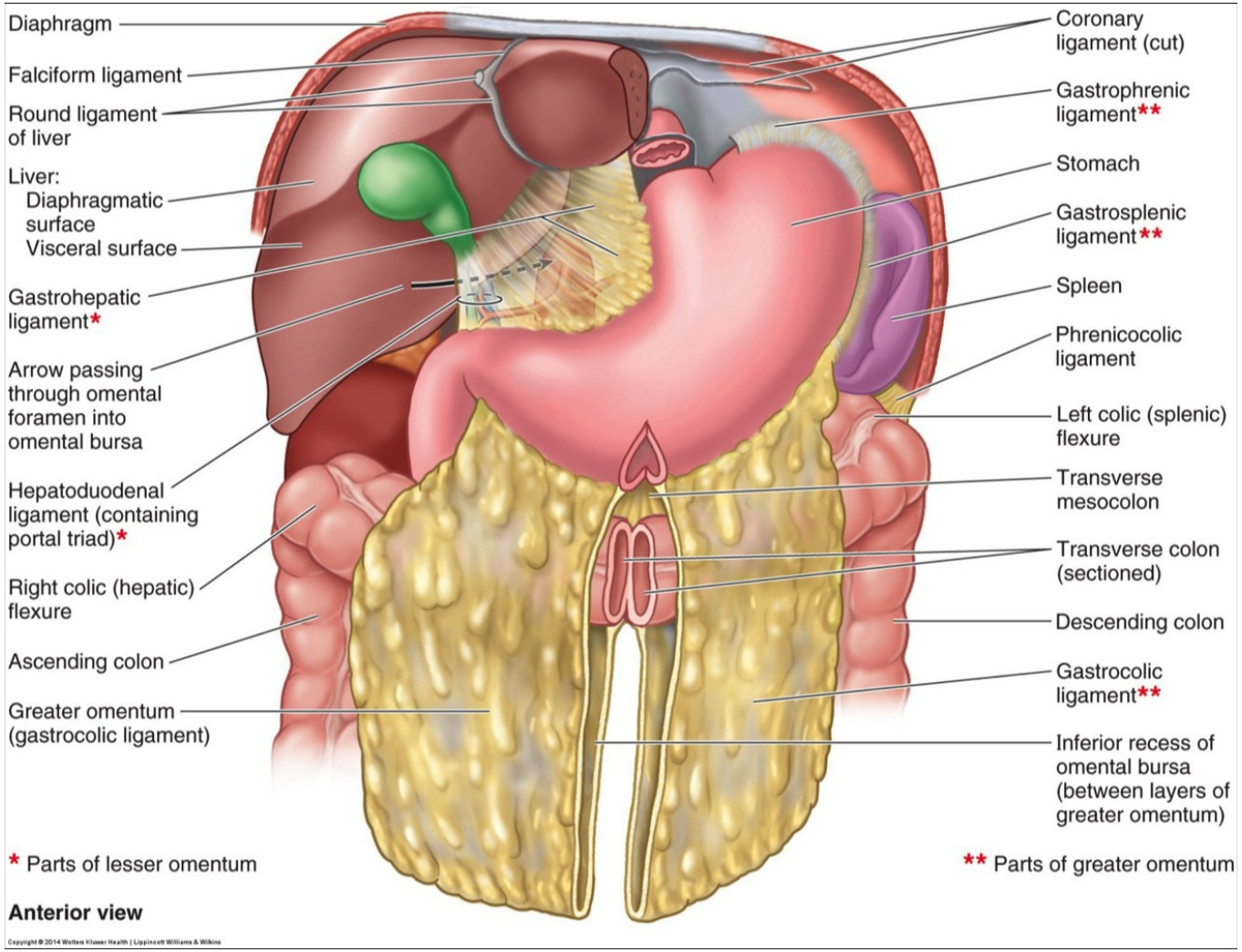

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Ligaments of stomach

Gastro splenic: connects hilum of spleen with upper part of greater curvature

Contains :

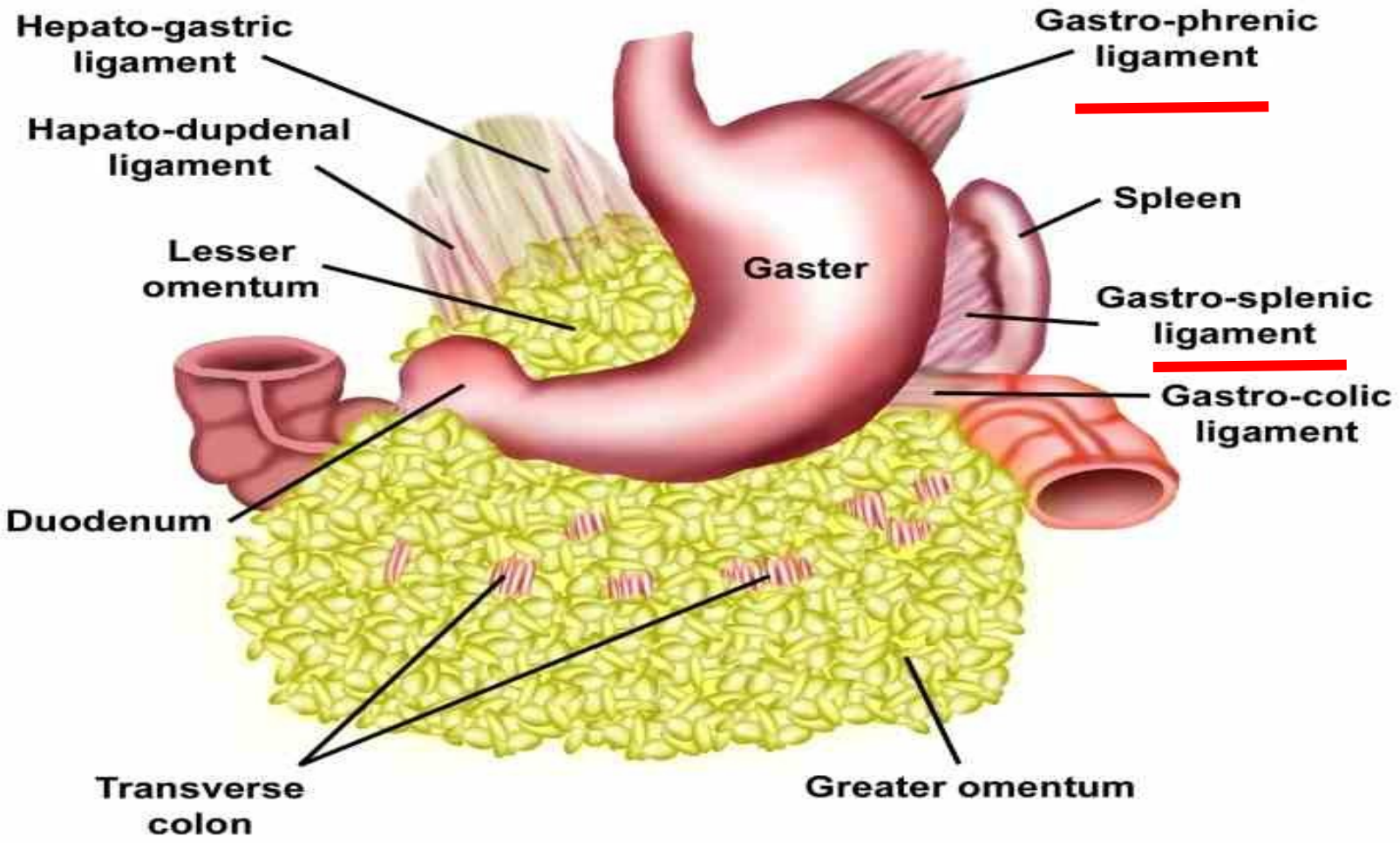
1- short gastric

2- left gastric epiploic

3- pancreatico-splenic lymph nodes .

Gastro phrenic: connects back of fundus close to upper part of greater curvature to under surface of diaphragm

Ligaments of stomach



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Lymphatic drainage

- **Fundus** drains into pancreatico- splenic
- **Along lesser curvature**: left gastric
- **Along greater curvature**: right gastric epiploic
- **Area of pylorus** : different directions(left gastric, pyloric , hepatic lymph nodes)

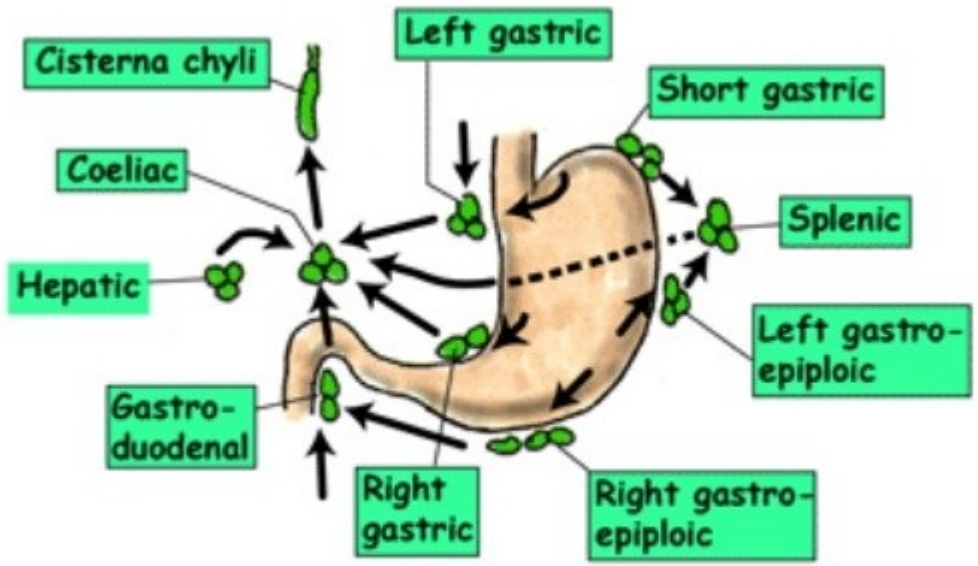
Lymphatic drainage

cer along lesser curvature would spread to which of the following group of lymph nodes?

t gastric
ancreaticosplenic
epatic
yloric

Lymph drainage

1. Fundus
2. Lesser curvature
3. Greater curvature
4. Pylorus



Lymphatic Drainage of Stomach

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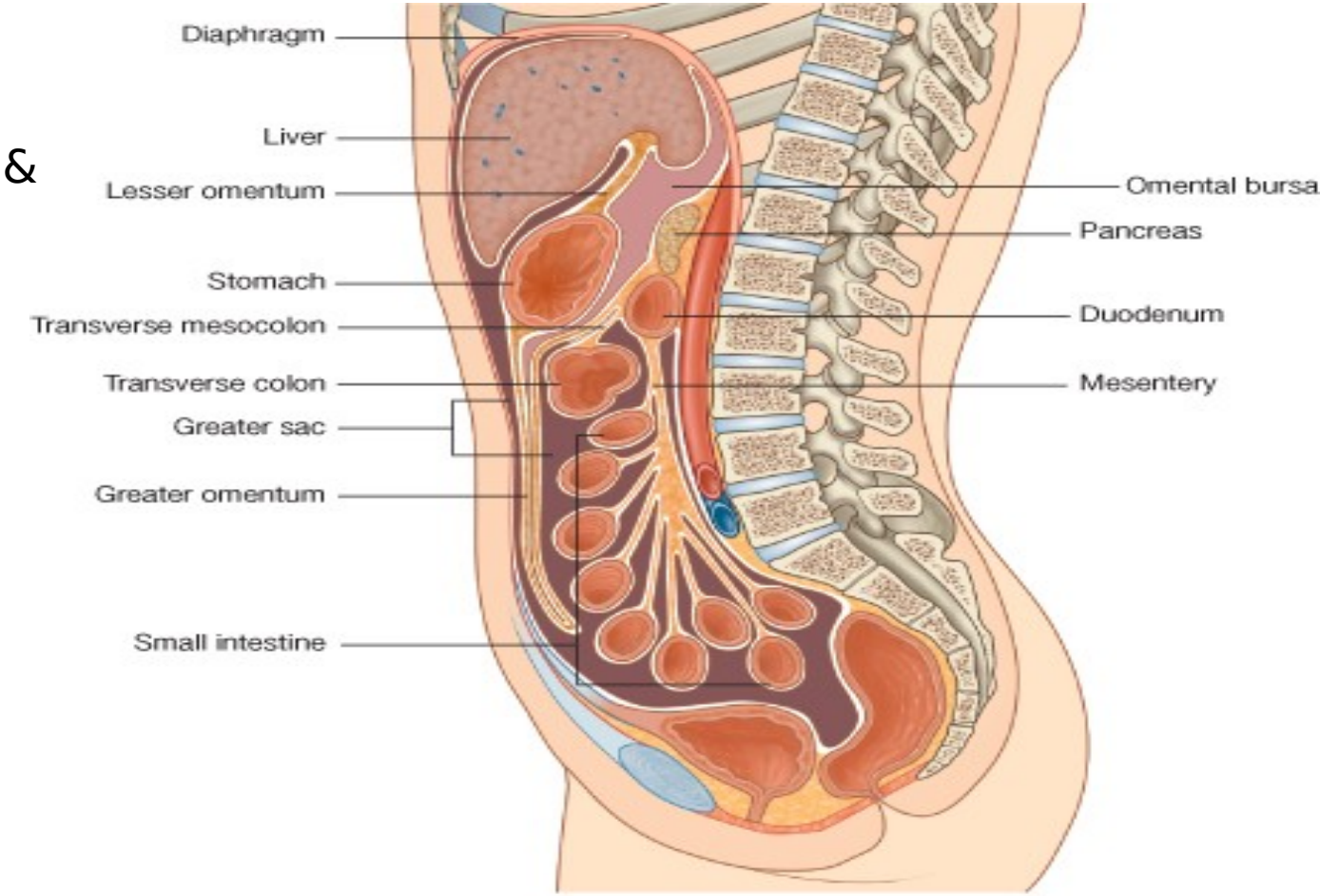
Lesser sac

Lesser sac

Cavity or extensive sac posterior to stomach& lesser omentum



Anterior & posterior walls of Lesser sac

Anterior wall:

- **Upper part**:

Caudate lobe of liver
Lesser omentum
Peritoneum covering posterior wall of stomach

- **Lower part**:

Anterior 2 layers of greater omentum

Posterior wall

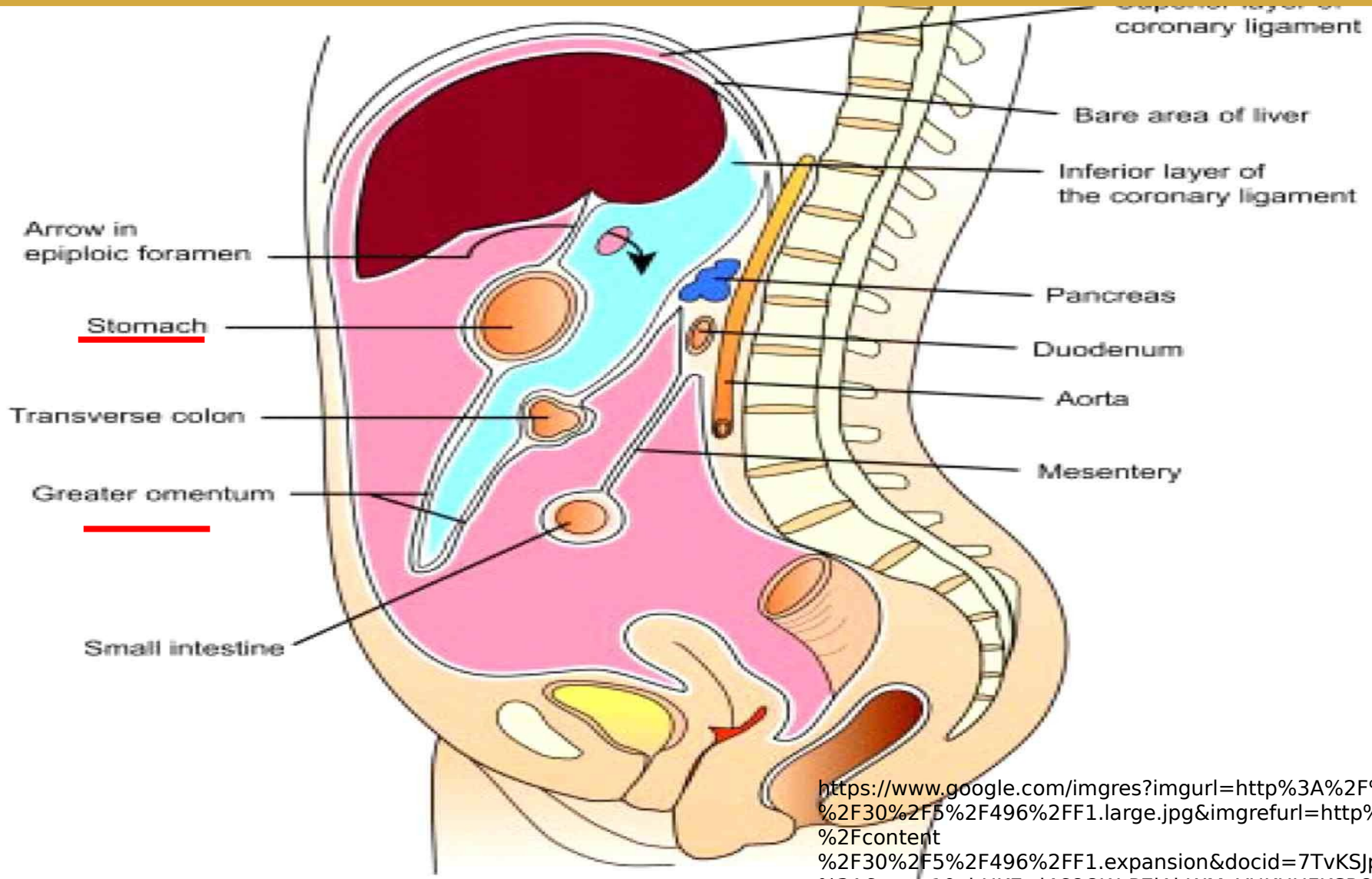
- **Upper part**:

Structures forming stomach bed

- **Lower part**:

Posterior 2 layers of greater omentum

Lesser sac



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Borders of lesser sac

Upper border: reflection of peritoneum from diaphragm to posterior layer of lesser omentum

Lower border: lower margin of greater omentum

Left border:

Left margin of greater omentum

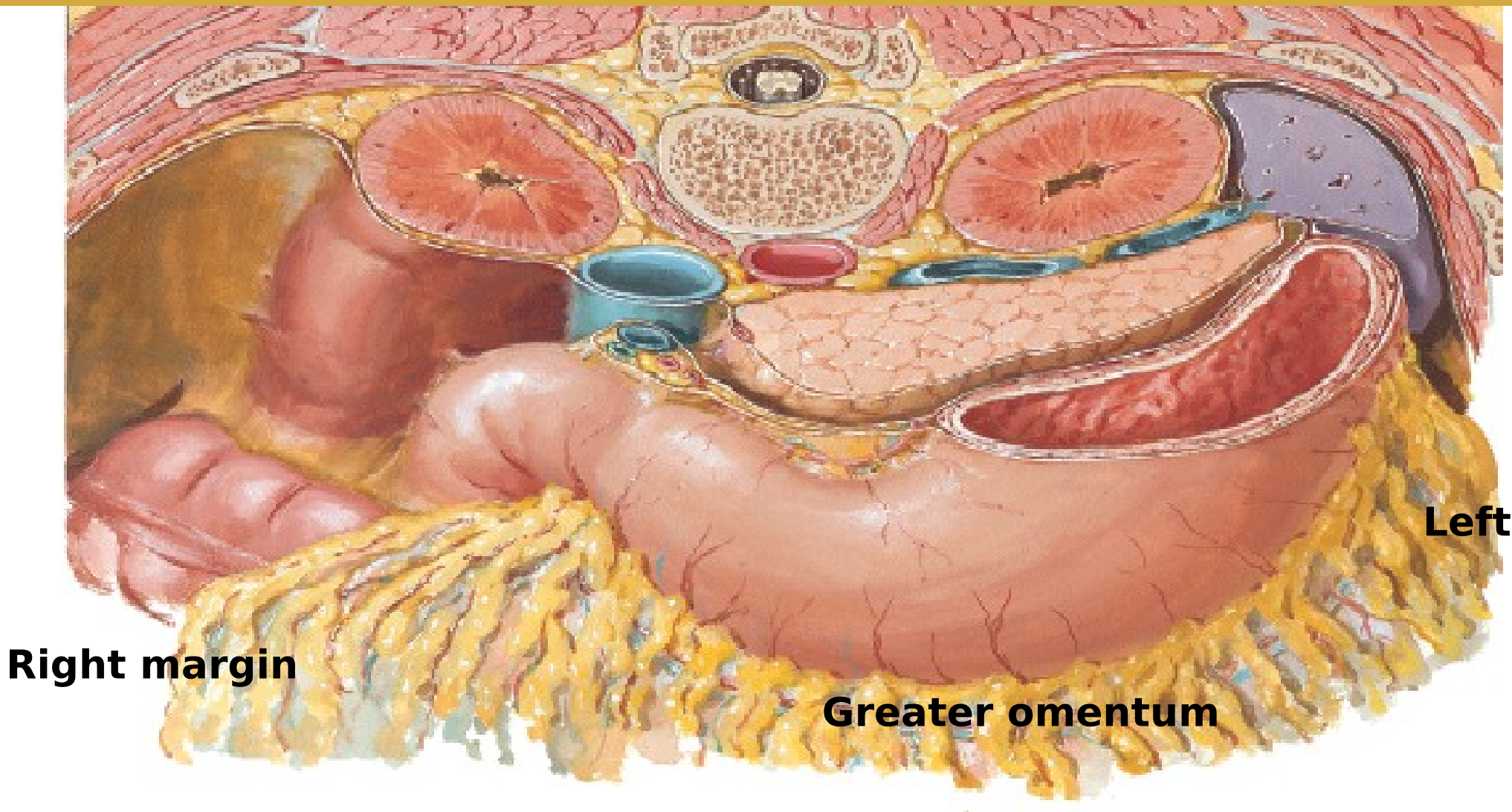
Upper part is formed by gastro splenic & lienorenal ligaments

Right border

lower part : right margin of greater omentum

Epiploic foramen

Lesser sac



Epiploic foramen

Opening in lesser sac, admits 2 fingers allows stomach to expand

- **Anterior**: right free margin of lesser omentum containing .....
- **Posterior**: IVC
- **Superior** : peritoneum over caudate process of liver
- **Inferior**: peritoneum over first part of duodenum
- Internal hernia may occur in

Epiploic foramen

A finger in epiploic foramen would touch superiorly

A- caudate process

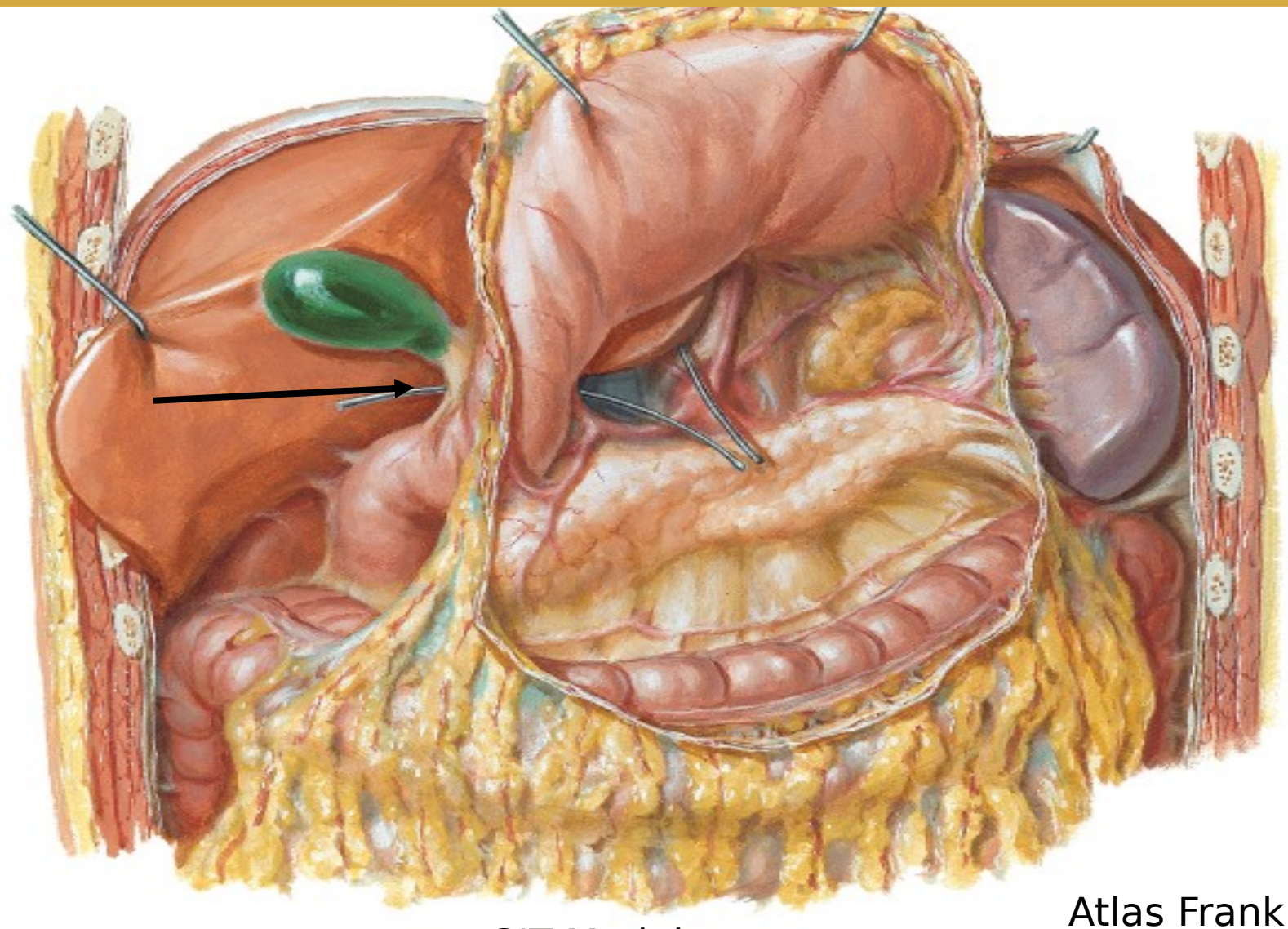
B- duodenum

C- pancreas

D- IVC

E- portal vein

Epiploic foramen



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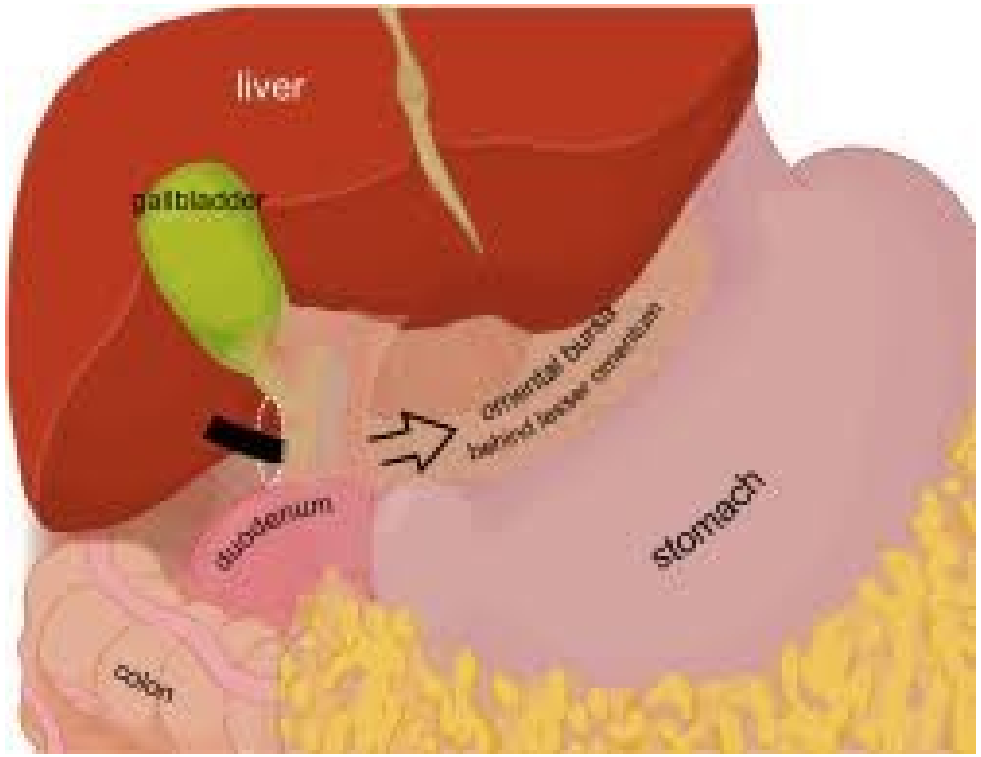
Epiploic foramen



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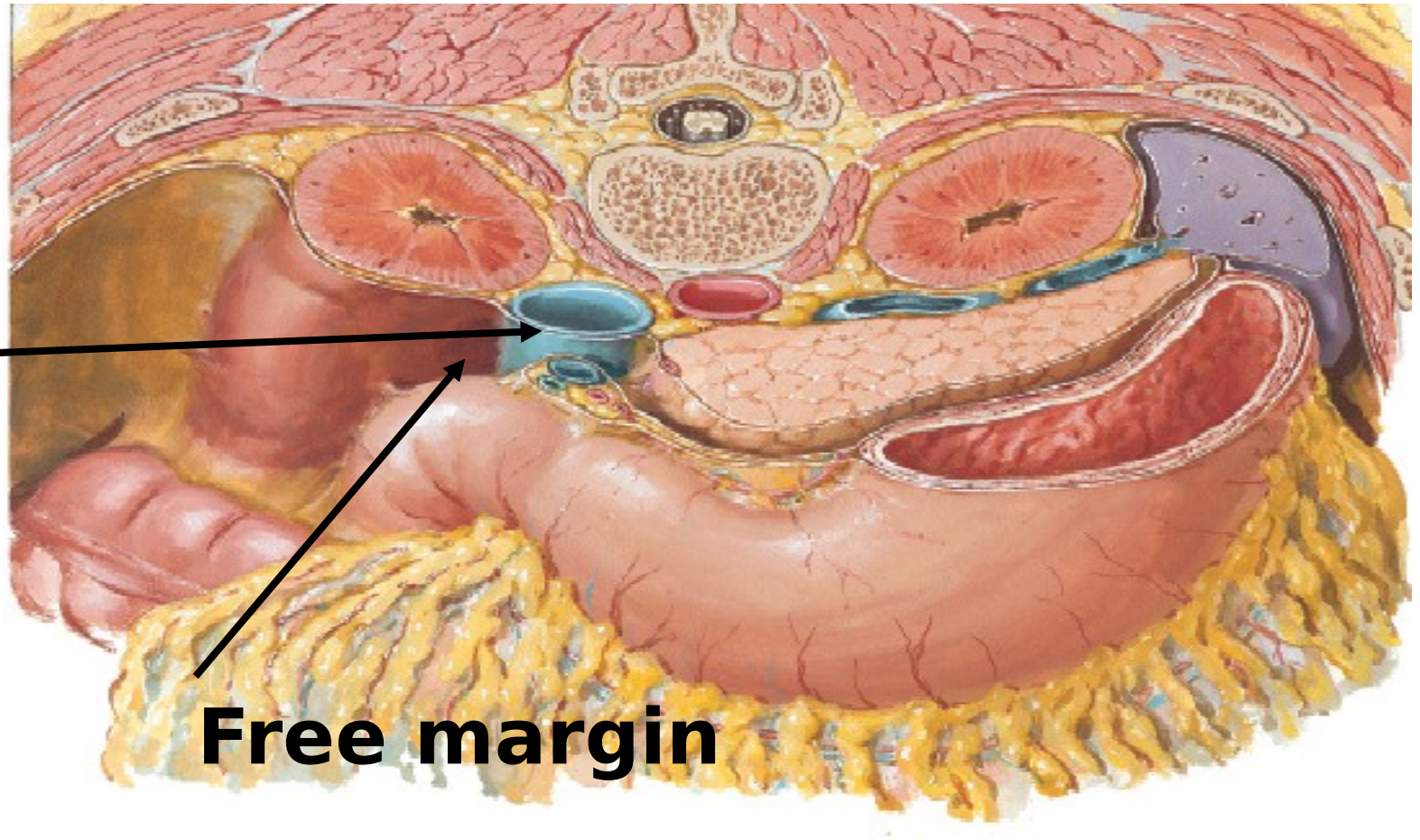
Epiploic foramen



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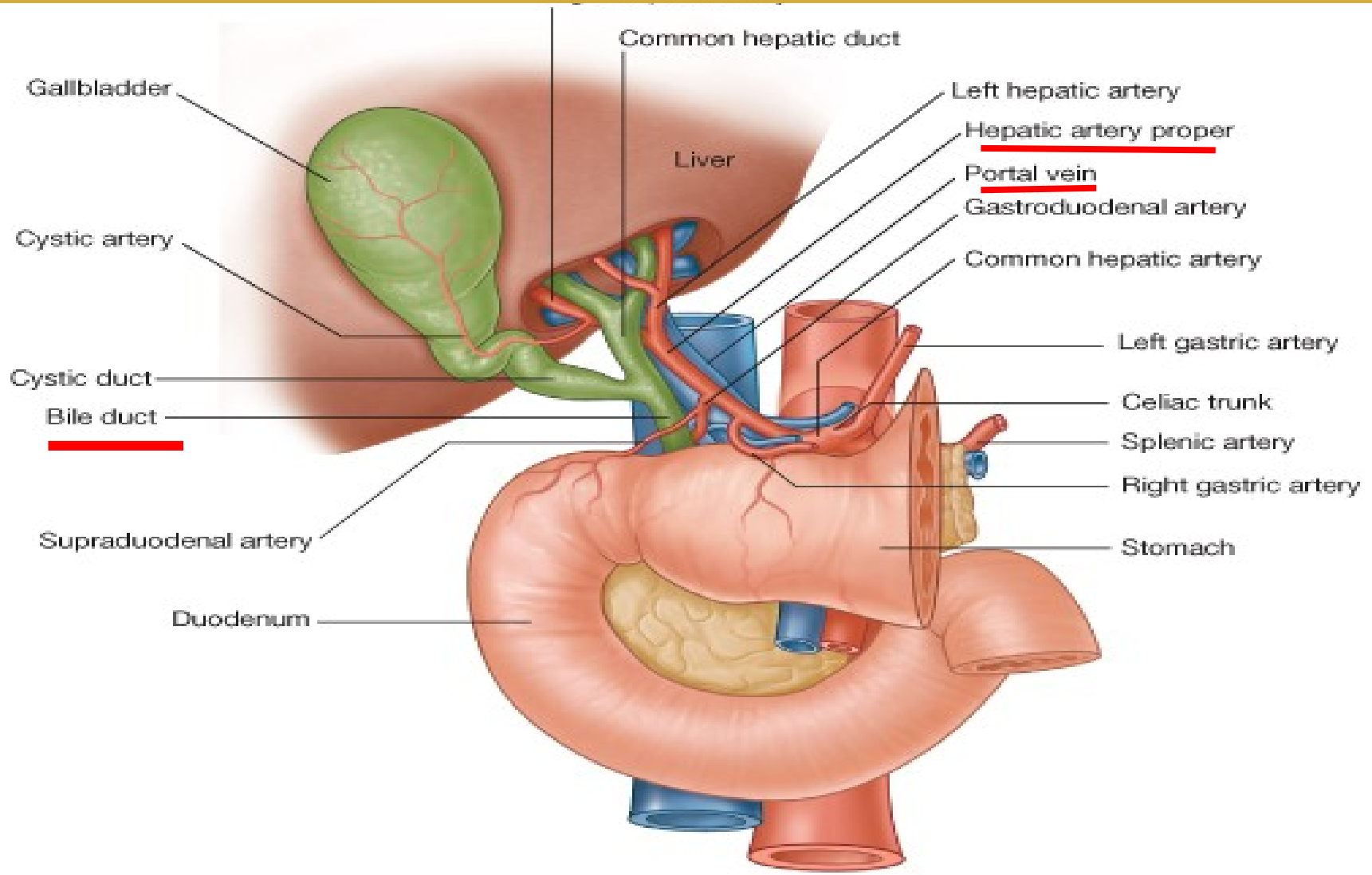
Epiploic foramen



Lecture Quiz

An ulcer in posterior wall of stomach could affect

a) Liver
b) Duodenum
c) Splenic artery
d) Left colic flexure

A finger in epiplioc foramen could touch superiorly

e) Bile duct
f) IVC
g) Portal vein
h) Caudate process

SUGGESTED TEXTBOOKS

1. Clinical anatomy by regions by Richard Snell